ABSTRACT OF THE INVENTION

138 A method for plating metal on a dielectric material includes dipping the dielectric in a solution containing catalytic metal particles. These particles have a dipole which helps them attach to the dielectric's surface. The dielectric's surface can be roughened to make it more attractive to such particles. The dielectric material is then placed in a metal salt solution that causes metal to be plated upon the dielectric by electroless plating. A thicker metallic layer can be deposited on top of the resulting layer by electroplating. This or other methods can be used to make an electrical circuit having one or more dielectric layers comprised of latex and one or more layers of conductive leads. A multichip module can be made which includes a plurality of integrated circuits mounted on a substrate; one or more dielectric layers comprised of a flexible dielectric material; and one or more layers of electrically conductive material patterned to interconnect such ICs. Such a module can be manufactured by placing a frame, with holes for holding integrated circuits, against a flat substrate. Integrated circuit chips are placed through the frame's holes to planarize their top surfaces against the flat substrate. The flat substrate is removed. One or more layers of dielectric are placed on top of the frames and chips. Photolithographic techniques are used to create conductive paths on the dielectric material between the ICs. The multichip module can also be manufactured by a similar process that does not use such frames.